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BOOKS SPECIAL

BRITAIN'S

BOMB

WHERE ARE THE NUKES?

DUNCAN CAMPBELL: EXCLUSIVE

ANDREW LUMSDEN: Safe Sex

TOO FEW BOMBS TO GO ROUND

Behind the official bluff, there are fewer nukes than everyone thinks. Using secret official documents, DUNCAN CAMPBELL reports on how many Bombs there *really* are. *Research by Patrick Forbes.*

HELENSBURGH, STRATHCLYDE, 20 June 1985, 1415 hours. For the first time a secret military convoy carrying nuclear weapons was involved in a public accident (see opposite).

As the convoy drove through the streets of the Scottish town, two heavily armoured nuclear weapons carriers collided. Smoke poured from the rear of one of the damaged load carriers. A military fire tender, tailing the convoy, pulled alongside, and fire hoses were unwound...

The previous night, the twelve vehicles in the RAF's Special Convoy had been stationed in the Coulport Royal Naval Armament Depot. There they had been loaded with nuclear warheads from Polaris missiles, ready for the return leg of their monthly trip to Scotland.

The Helensburgh incident did not cause anything worse than a traffic jam, this time ...

An official Ministry of Defence enquiry has been held into the accident. Its findings are not public, and are not intended to become so.

THE CONVOY THAT CRASHED in Helensburgh was part of the routine business of maintaining Britain's nuclear weapons stockpile. But the real size of the British nuclear stockpile is, in fact, far less than the normal public estimates of about 500 to 1,000 weapons.

It has usually been assumed that the advent of Trident missiles to replace the present Polaris will mean an enormous increase in the size of the British stockpile. Each of the four planned Trident submarines will carry sixteen missiles, the same as Polaris. But each Trident missile can carry fourteen warheads instead of, at present, the Polaris maximum of three.

To equip Trident fully would require, in theory, 704 new warheads. Trident's capacity has been taken to imply that, during the 1990s, Britain will acquire a total of between 1,000 and 1,500 nuclear warheads.

In fact, the present British stockpile is insufficient to fill even one Trident D5 submarine's complement of 224 warheads. There are in total only about 200 British nuclear weapons — perhaps even less.

In an unpublicised and unilateral act of nuclear disarmament, Britain has also dismantled all the H-bombs (thermonuclear weapons) which equipped the RAF V-bomber force during the 1960s and 1970s. By the early 1980s, according to official sources, the RAF had stocks of only one kind of 'tactical' nuclear weapon, the WE177. Although some of the RAF's former H-bombs may have been fitted for a time to some Polaris missiles, these too will have been removed by now to make way for (and provide the nuclear material for) the smaller, multiple warhead Chevaline system.

Despite widespread suspicions about the amount of military plutonium the government has manufactured, aired by CND and other groups at the Sizewell Inquiry, it now appears that such suspicions (which the *NS* has also publicised) may have been thought officially useful in that they diverted attention away from the (comparatively) *small* size of Britain's nuclear stockpile, thus helping to conceal the severe physical constraints on British nuclear weapons production. The government is known to have systematically encouraged such exaggerated publicity about nuclear weapons stocks throughout the 1950s and 1960s.

The constraints on British nuclear weapons — in particular, the extremely limited amount of weapons grade plutonium available — mean that even with British Nuclear Fuel's 'military' nuclear reactors now working at maximum capacity, sufficient warheads for the new Trident submarines can only be produced by removing the plutonium from an equivalent number of existing nuclear weapons.

According to a defence specialist who has worked inside the nuclear programme during the 1980s, the British stockpile now consists of approximately:

80 RAF tactical 'lay-down' bombs, type WE177, believed to have a variable nuclear yield between about 5 kilotons and about 200 kilotons (about 15 times the power of the Hiroshima bomb);

25 RN nuclear depth bombs, a low yield variation of the RAF tactical bomb, for use against submarines;

40 Polaris-Chevaline **missile warheads, type A3TK, believed now to carry three seperately targetted nuclear weapons.**

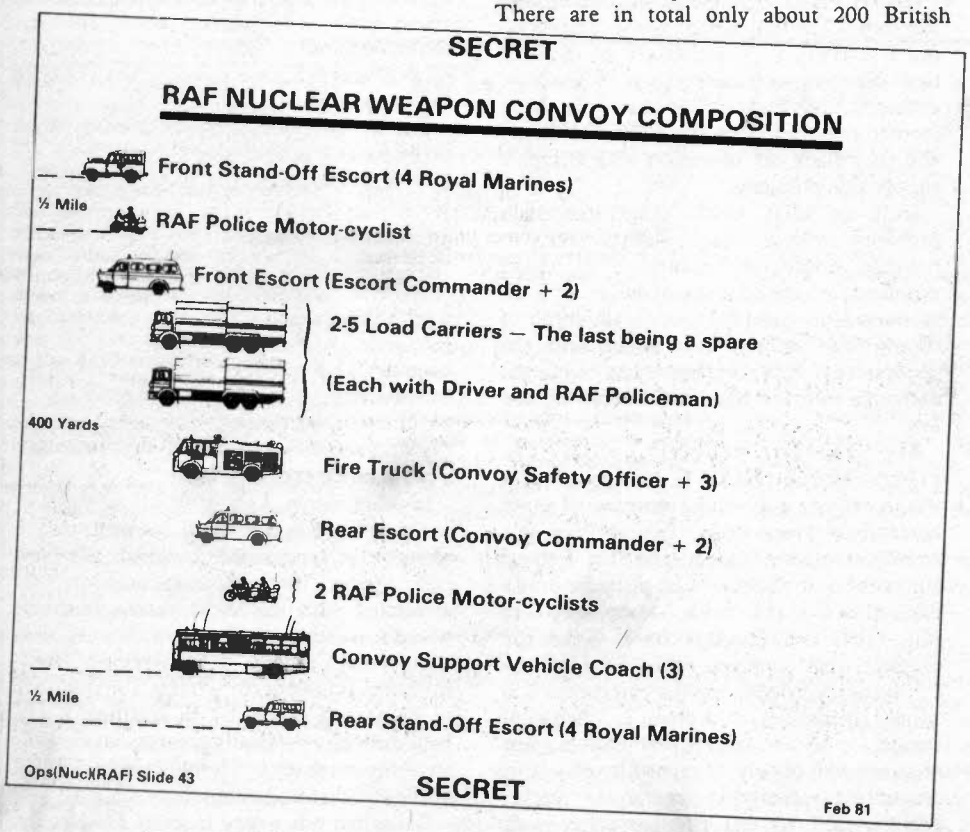
This makes a stockpile total of, at most, about 225 nuclear weapons; or, if Chevaline missiles only contain two warheads, about 185.

Even excluding the warheads on US Navy Poseidon submarines, based in the Holy Loch in Scotland, this means that the United States has more nuclear weapons in Britain than Britain does. Additionally, the US provides nuclear weapons for use by the British Army and RAF in Germany, and nuclear depth charges for RAF Nimrod anti-submarine aircraft stationed in Britain.

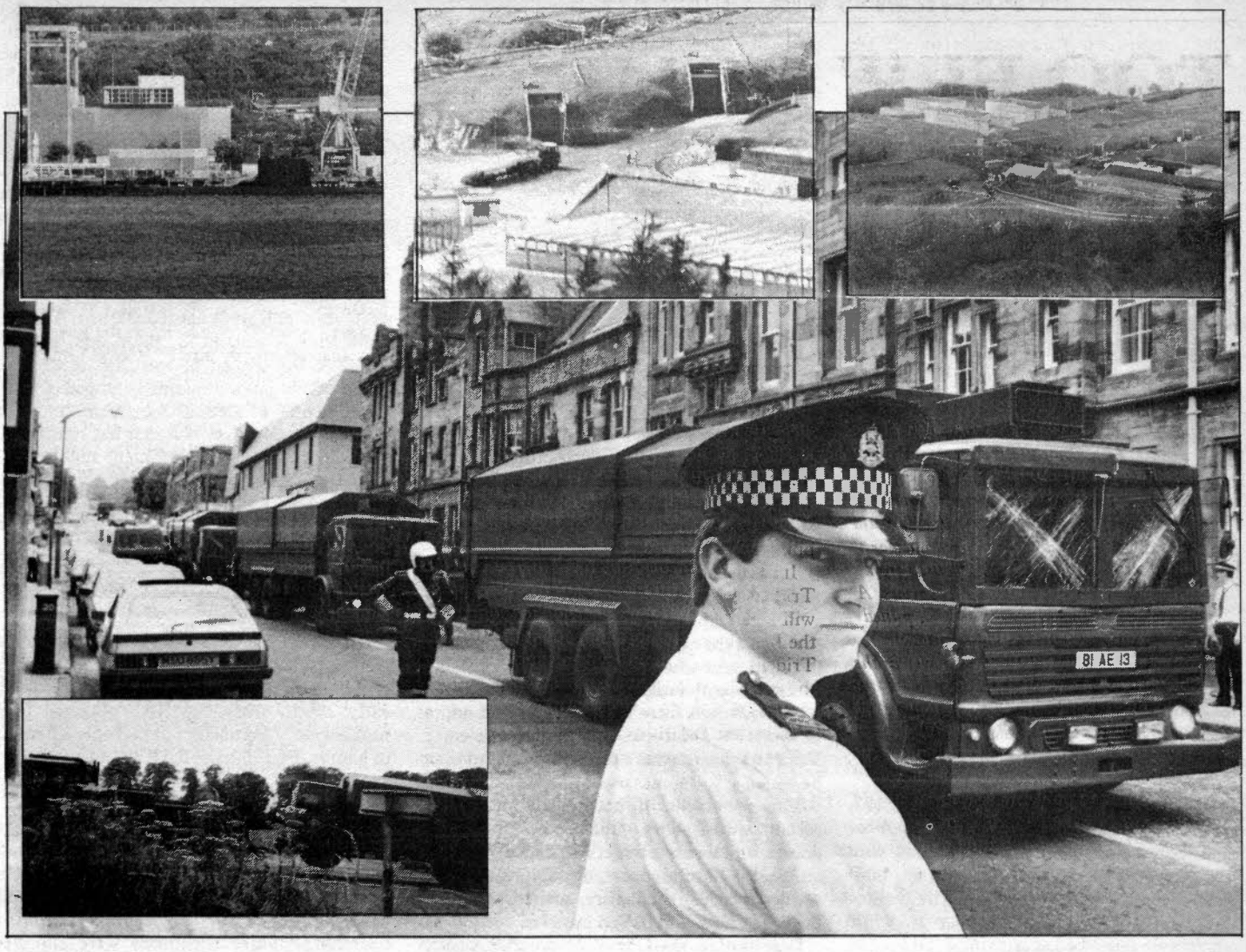
Mrs Thatcher and senior members of the cabinet therefore know that much of Trident's potential nuclear capacity is pointless for lack of warheads. According to a senior defence source:

> It was quite clear when the decision to order Trident was taken, there would not be enough nuclear material to fill up all the operational spaces on the missiles — there never would be...

The warhead shortage is also exacerbated by the increasing age of the British tactical bomb, ▷



Slide from official RAF briefing on nuclear weapons convoys in Britain (redrawn and reset from poor quality original copy). Film of convoy on the move will be shown by Yorkshire TV next Tuesday.



THE PHOTOGRAPHS show the sequence of events after a Polaris submarine arrives at the Royal Naval Armament Depot, at Coulport, west of Glasgow. The Polaris missiles are unloaded (above left); a Polaris missile may be seen on the extreme left of the picture). The missiles are then transported to the missile and warhead storage depot (above centre). Warheads for refurbishment or replacement are removed, and loaded into the carriers of the RAF Special Convoy (above right the convoy is seen mustering). After the Helensburgh accident (main photo), the damage (and by then unloaded) nuclear weapons carrier was spotted a few days later under tow near Oxford, limping back to base (below left).

Official instructions on the 'Security of RAF Special Convoys' are contained in orders issued to chief constables. The copy we have obtained was issued to Avon and Somerset Constabulary, as 'Force Permanent Operational Order Number 3.' The Force will not comment on the contents of the Order, but say that changes have been made recently.

The instructions, classified as 'Secret', say that the movement of 'special weapons by road convoy ... is carried out by RAF teams specially trained for the purpose [including] armed Service personnel.' The convoys are 'completely self-sufficient regarding the security and safety of the load being escorted', and are accompanied by a 'convoy support vehicle' which carries arms and ammunition, rations, communications sets, radiation measuring and decontamination equipment, and spare motorcycles for the accompanying police escorts. The official RAF slide (facing page) shows the composition of the convoy.

Although the convoy is under RAF control, armed security guards are provided by the Royal Marines Commachio Company, a special security force formed in 1980. Commachio company marine guards are stationed at the Clyde submarine bases, Faslane and Coulport, and at depots holding nuclear naval weapons — believed to be Dean Hill, near Salisbury, and Ernesettle, near Plymouth. Just two naval ports — Portsmouth and Devonport — are 'certified' safe for nuclear weapons.

The convoy is fitted with advanced communications equipment, with which it can contact any force in whose area it is travelling. The convoy commanders and support vehicles are fitted with long range high frequency radios with which 'the convoy is in constant communication with its MoD Control, which continuously monitors its progress'.

The convoy can use four special codewords to identify itself: CUBAN, ODDLY, SOLID, or HURRY. In the event of an accident, the nuclear convoy must broadcast the secret codeword 'OLDHAM', followed by a number. OLDHAM ONE means that the convoy is halted after an accident, but radioactive material has not been spilled. OLDHAM TWO is worse; safety may be at risk. OLDHAM THREE is the signal to police that bombs have been damaged — or worse — and radioactive material spilled.

If the convoy comes under armed attack, then the message to be relayed to the police is 'BILBO':

> This is ODDLY — under attack by armed party at grid reference ... BILBO, BILBO, BILBO! ...

The *New Statesman* first published a photograph of the RAF Special Convoy in 1982, followed by an artist's impression of the overall convoy a year later (*NS* 10 June 1983. Since then, Cruisewatch and Polariswatch groups and others have logged over 80 sightings.

The convoys are controlled by the RAF Special Safety Organisation, based at RAF Locking near Weston Super Mare. Wherever the convoy goes, the Special Safety Organisation provides a radiological safety team on standby, known as a Base Support Team (BST).

The BST includes 14 specially trained RAF personnel and a 'Medical Centre' team. In the event of an accident, their tasks include providing a 'cordon at 300 metre radius minimum [ensuring] that cordon contains the radioactive hazard'. They must then 'provide initial control of entry to and exit from the Hazardous Zone, including protection and monitoring of personnel', and 'prepare the Medical Centre for receipt of casualties'.

If a severe accident damages a nuclear weapon, the greatest hazard would result from an explosion accompanied or followed by a fire. Both Britain and the United States have extensively studied the possible results of such accidents to nuclear weapons during storage or transport.

These studies have not been published; however, a 1979 study by the US Congress General Accounting Office has been published, which predicted that, under typical atmospheric conditions, a severe nuclear weapons accident might generate a radioactive plume extending for 28 miles and spreading across 2.5 miles.

The published US assessment corresponds closely with similar calculations made by British scientists from Aldermaston, who carried out a series of tests called Vixen B on the Maralinga range in Australia during the early 1960s. The objective was to discover what would happen to a nuclear weapon damaged in transit. According to one of the reports prepared before the current Australian Royal Commission inquiry, the likely dispersal of plutonium in these tests required 'a radiological safety radius of 35 miles'. ●

the WE177. Even when the new plutonium manufacturing facilities at Aldermaston, the 'A90' complex, become available during the next three years, two of the four processing 'bays' will not be available for Trident warhead manufacturing. According to secret bulding specifications for the new complex, one bay will be needed to recover plutonium from existing British nuclear weapons and a second will be needed for research and development work on the replacement for WE177 and the navy nuclear depth charges.

By the time Trident warhead manufacture finishes, after 8-10 years of production, many of the WE177 bombs will have exceded their design lifetime of about 25 years and will urgently need replacement (if the government of the day chooses to keep nuclear weapons).

Five years ago, the Ministry of Defence's Assistant Chief Scientific Adviser (Nuclear), Dennis Fakley, told the House of Commons Defence Committee that:

> The Trident missile is capable of carrying eight warheads. *There is no guarantee* that you neccessarily will carry eight warheads on that Trident missile (our emphasis).

In fact, according to official sources, there remains 'no way that the UK can produce enough plutonium for Trident warheads; half the warhead slots will be empty'. Yet, in 1982, the government decided to order Trident D5 missiles, instead of the earlier C4 variety. Each D5 missile will have six extra empty spaces.

THE OLD 'TACTICAL' bomb, the WE177, was first delivered to the RAF in September 1966. Some V-bombers were equipped with this weapon rather than the British built 'Yellow Sun' hydrogen bombs. The Yellow Suns have all now been taken apart, while WE177s are described as growing a 'bit long in the tooth'. Stocks of the WE177 bomb are held at a few RAF bases where nuclear capable aircraft are based, including Honington in Suffolk, Lossiemouth in Scotland, Coltishall near Norwich and St Mawgan in Cornwall, as well as Laarbruch in Germany.

The RAF Special Weapons Convoy has been regularly observed in transit to and from Honington and, less frequently, St Mawgan. Its most frequent trips take it from the Burghfield factory to Scotland; then via temporary stops at RAF bases in Carlisle, Leeming or Wittering, to Honington. It then returns to Burghfield via Cambridge and Oxford, or via Slough and Watford, or it goes on to the underground Royal Naval Armament Depot at Dean Hill, east of Salisbury.

The Navy has its own, relatively small stock of nuclear depth bombs. For some time after the Falklands War, they were not allowed to take them to sea. Ministers had belatedly discovered that the admirals had sent three quarters of the total British naval nuclear stockpile towards the South Atlantic battle zone.

In peacetime, nuclear depth bombs are only allowed on board attack carriers (like HMS *Hermes* and HMS *Invincible*) and certain anti-submarine frigates. As all of the available ships in these classes set off for the Falklands in 1982, the 'War Cabinet' — the Oversea and Defence committee (South Atlantic) — were warned that most of the Navy's nuclear weapons would soon cross the equator.

The RAF's nuclear capacity, in contrast to the Navy, had always been subject to firm political control. It is not normally allowed off the ground with nuclear weapons in an armed or armable condition. The OD(SA) committee ordered that all nuclear weapons be taken off the task force after it reached Ascension Island. A Royal Fleet Auxiliary vessel collected them.

There were thus no tactical nuclear weapons on board the surface ships sent south to the Falklands. The deep-diving vessel sent to recover 'equipment' from the sunken wreck of HMS *Coventry* — widely suspected at the time to have been an attempt to recover lost nuclear weapons — was in fact attempting to retrieve top secret cryptographic equipment and codebooks which the destroyer's captain had not had time to destroy. Type 42 destroyers, like *Coventry*, do not carry nuclear weapons in peacetime.

After 1982, all the RN nuclear depth bombs were taken back to, and kept in, British depots. But the advent of nuclear capable Sea Harrier aircraft has given the Navy the chance to lobby for new nuclear roles.

THE ONLY authoritative statement about the Chevaline improvement programme for Polaris missiles is the opaque official assertion that the installation of Chevaline 'does not involve any increase in the number of warheads associated with the Polaris force'. Chevaline is said not to be a MIRV (Multiple Independent Re-entry Vehicle) system, where different warheads can be aimed at different targets.

This statement, if not wholly untrue, is certainly misleading. The Chevaline system does permit separate targets to be identified and attacked — but the spread, or 'footprint', of the warheads cover a smaller area than is customary for US or Soviet MIRVed missiles.

Despite this, the Chevaline programme has ironically *reduced* the number of targets which can be attacked, because of the requirement that there must be a British capacity to destroy Moscow — known as the 'Moscow criterion'. The *raison d'etre* of the British nuclear deterrent has always been that, despite the normal commitment of British Polaris missiles and bombers to Nato, they can be used independently 'where Her Majesty's Government may decide that supreme national interests are at stake'.

During the debate about Chevaline in the early 1970s, there was extensive argument about the Moscow criterion. The question arose whether it sufficed for national deterrent purposes to have the capacity to attack a range of major and minor Soviet cities — or whether it was essential to be able to destroy Moscow, despite its growing ring of anti-missile defences.

The official justification for proceeding with Chevaline was that the ability to attack Moscow had to be retained. The new warheads therefore employ 'penetration aids' to confuse tracking radars and other Soviet defence systems. The Chiefs of Staff, and some nuclear planners, had reservations about this objective. But if Chevaline had not gone ahead in the early 1970s, the Aldermaston nuclear weapons design staff would have had nothing to do.

Eventually, the nuclear target planners were hoist with their own petard. Since the ostensible purpose of Chevaline was to retain the ability to attack Moscow, more of the missiles had to be targetted there, in order to assure Moscow's destruction.

A great deal of Chevaline testing still remains to be done. According to US documents on strategic missile testing, 'A3TK' (Chevaline) firing tests are to be conducted continuously at the US Air Force Eastern Test Range, off Florida, every year from now until 1988.

But the Chevaline stockpile is also much smaller than is normally assumed. There is not one missile for every one of the 64 launch tubes on British Polaris submarines, since, at any given time, one Polaris submarine is always in 'long refit' at Rosyth naval dockyard. A second submarine is usually in 'short refit' and not available for service in less than four to six weeks. Only one submarine is on patrol at any time, while a second submarine must be available to take over before it has returned to port. In consequence, sufficient missiles and warheads are only needed to equip two submarines, plus spares. About forty full Chevaline warheads therefore suffice. It is the fitting and refitting of these warheads that has resulted in the increased Special Convoy traffic between Burghfield and Scotland.

THE CURRENT 'SHORTAGE' of nuclear warheads, compared to delivery systems, is nothing new. A similar situation occurred in the early 1960s, when the RAF obtained large numbers of V-bombers, but had only a handful of bombs. By 1960, the RAF had 14 V bombers squadrons — but sufficient bombs for less than a quarter of the aircraft available.

The result was a desperate scramble to find alternative uses for at least six squadrons of V-bombers. Many aircraft were abandoned as bombers and refitted instead for refuelling, reconnaissance or electronic jamming operations. Three squadrons were allocated completely to NATO, not national requirements, and thus gained access to US nuclear weapons instead.

The shortage became more acute once the Polaris submarines were operating, as the RAF had to hand over its bombs to be put instead on top of Polaris missiles. As the Polaris submarines came into service, RAF bombers and Blue Steel missiles were withdrawn and scrapped. The Navy's takeover and eventual dismantlement of all the RAF's thermonuclear weapons may help to explain why some former Bomber Command officers have fulminated about Polaris, frequently coupling the Royal Navy with CND and the Communist Party as equal threats to national security.

Former Bomber Command chief, Air Vice-Marshal Stewart Menaul has called Polaris 'not credible' and the 'greatest blunder in recent military history'. Underlying this statement may be an awareness on the part of the military that British unwillingness to enter our nuclear weapons in arms negotiations with the Russians may be less because the government is afraid to trade and more because there is little *to* trade. □

NEXT WEEK: The peace time health hazards of nuclear weapons.

The Yorkshire TV documentary, Inside Britain's Bomb, *based in part on these disclosures, will be shown on Tuesday 3 December at 10.40 p.m..*